Title: Impact of Covid-19 pandemic on learning outcomes, curriculum transaction and evaluation.

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Abstract

Covid -19 pandemic knocked the door of our schools and colleges in March, 2020. Little did we know the impact it would lead in our life. Educational institutions continued on the pretext that it is like any other calamity that engulfs our city, bringing everything to a standstill for a brief period of time. COVID-19 has affected a large number of students across states, class, caste, gender and region. The shutting down of schools and the decision of shifting traditional classrooms to digital platforms is not only increasing learning inequality among children, but also pushing a large number of children out of school due to the digital divide. Technology enabled classrooms became technology driven classrooms. Textbooks and notebooks to a large extent was substituted with electronic gadgets – phones, laptops, desktops and tablets. As e-learning becomes the "new normal", the authorities have been taking steps to make digitization of education accessible and affordable for all. This paper aims to study the impact of Covid-19 in education focusing on the learning outcomes, curriculum transaction and evaluation. The data was collected from 200 teachers from various schools and colleges. The data was analysed statistically. The findings of the study revealed the impact of Covid-19 pandemic on learning outcomes, curriculum transaction and evaluation.

Keywords: Covid-19, pandemic, learning outcomes, curriculum transaction and evaluation

Introduction:

Covid -19 pandemic knocked the door of our schools and colleges in March, 2020. Little did we know the impact it would lead in our life. Educational institutions continued on the pretext that it is like any other calamity that engulfs our city, bringing everything to a standstill for a brief period of time. The initial few days of educational discourse was just sending few PowerPoint presentations on the WhatsApp group or notes circulated on emails or WhatsApp. Many of the educational institutions did not even have a common online platform to collaborate with students and teachers. Few institutions that had the online access to Institutional Google account barely used it in the daily curriculum transactions. Technology seeped into the classroom in a very small manner, it was either by lectures through presentations interspersed through few activities or it would be a project that the student would remotely do in his/her learning time. The educational scenario was built on the strong foundation of face to face physical learning space. The educator and the educand shared the same learnings space offline and emerged in active and integrative learning.

With the onset of Covid – 19 in our city, State and country, each of the so called 'knowledge providers' was unaware and totally blindsided in the next course of curriculum transactions. The national

emergency focused on health as a priority and saving lives of the people in their country. Education for long received a backseat in the entire process. Neither the schools nor the Universities could immediately come up with an alternate solution. It was more to be understood as 'trial and error technique' to teaching and learning. Evaluation had almost lost its prominence as the process itself was totally derailed.

India is a country of masses and hence it is important that education reaches even to the remotest part of the country. However, this is a dream that everyone wishes to see in. its completeness. Technology enabled classrooms became technology driven classrooms. Textbooks and notebooks to a large extent was substituted with electronic gadgets – phones, laptops, desktops and tablets. The number of children at home was more than the number of gadgets at home. Gadget was used by students for a very minimal period of time. The internet connectivity too was a big hurdle in getting online for classroom instructions. Overall there was a decline in education reaching to the masses. Only few privileged had the benefit of uninterrupted classroom transaction and access to various online sites to acquire knowledge and understanding.

COVID-19 has affected a large number of students across states, class, caste, gender and region. The shutting down of schools and the decision of shifting traditional classrooms to digital platforms is not only increasing learning inequality among children, but also pushing a large number of children out of school due to the digital divide. Other than learning, the absence of schooling would also have a long-lasting effect on the health and nutrition of children. The role of the budget in the current situation as well as beyond the pandemic is very crucial to ensure inclusive education for all. Online education reinforcing digital divide and learning inequality. Due to the closure of schools to ensure the health safety of children, teaching has moved to digital platforms either through online teaching methods, government portals, Direct-to-Home (DTH) channels and others. However, remote learning is a challenge for many students in India given the vast differences in access to basic digital infrastructure, including electricity, devices like smartphones and computers, and internet connectivity.

Theoretical background and Statistics

While almost 99.9 per cent of homes in India have a glaring issue in power connection, the quality/ voltage of electricity supply is quite poor and considerably slow, especially in rural India. Only 47 per cent of rural households receive electricity for more than 12 hours (Kundu, 2020a). While 24 per cent Indians own a smartphone, only 11 per cent of households possess any form of computer and just 24 percent of Indian households have an internet facility (MOSPI , 2019). Unfortunately, only eight per cent of households with children in the 5-24 year age group have both a computer and an internet connection (Kundu, 2020a). Further, there is also a huge variation between rural and urban India. Only 4.4 per cent of households in rural India have a computer as compared to 23.4 per cent in urban India; only 15 per cent of households in rural India have an internet facility as compared to 42 per cent in urban India (MOSPI, 2019).

Having online classes on a regular basis has a cost implication as students have to bear the cost of internet services. While the internet has played an instrumental role in the continuation of education and learning, it has also given way to multiple cyber related crimes, such as hacking and cyber bullying and also exposed children to explicit and violent content, which can provoke, corrupt and influence young minds.

Impact of Covid-19 pandemic on learning outcomes, curriculum transaction and evaluation.

Not only early learning, pre-schools play a crucial role in laying the foundation of a proper

psychological, physical and social development of a child. The closure of schools and other

institutions that provide early childhood care and education continues to pose an immense threat to their holistic development potential. There is also a growing need to focus on the

mental health and the psychological needs of a child during this pandemic. It is highly probable

that economic hardships stemming from the loss of employment and income will have an adverse effect on their mental health. Children facing acute deprivation in nutrition, protection

or stimulation, or periods of prolonged exposure to toxic stress are likely to develop lifelong

challenges as their neurological development is impaired (CRY, 2020).

Disproportionate impact of school closures on marginalised children: Even though remote learning strategies aim to ensure the continued learning for all children, it is well known that the most marginalized children may not be able to access these opportunities.

Teaching becomes more challenging during school closures: Distance learning has affected the teachers since most of them are teaching remotely for the homes.

A survey by ASSOCHAM and Primus Partners shows that only 17 per cent of teachers in government schools reported that they were trained to conduct online classes; in private schools, this figure stood at 43.8 per cent (ASSOCHAM, 2020)

India already faces a shortage of qualified teachers. About 14.6 per cent teachers in government schools, 9.7 per cent in government aided schools, 25.4 per cent in private unaided schools and 58.7 per cent in 15 other school categories did not have any professional qualifications (NIEPA, 2017).

Along with online classes, teachers are also burdened with COVID duty and this has severely impacted their health and well-being.

Many teachers, especially those in low fee private schools as also contractual teachers in government schools are going through a period of economic uncertainty; many of them are experiencing irregular salaries, salary cuts or even job loss due to the pandemic. Existing policies and budgetary interventions

MHRD and NCERT are building capacities of. teachers and school heads at the elementary

16 level across the country through NISHTHA. The platform has been customized for providing online mode training to the existing 24 lakh untrained teachers and school heads (PIB, 2020b).

The 'Atmanirbhar Bharat Abhiyan' launched the 'Manodarpan' initiative to provide psychosocial support to students, teachers and families to address issues related to mental health and emotional wellbeing. It also provides tips for teachers and families to provide support to children (Manodarpan Portal, 2020).

With online teaching becoming the norm due to the lockdown, the State of Kerala trained81,000 primary teachers in 11,274 schools across the state. The training was conducted by the Kerala Infrastructure and Technology for Education (KITE) establishment; KITE also rolled out KOOL, an

e-learning platform for teachers by the Kerala government, which has benefitted 12,000 teachers (Edex Live, 2020).

As schools in India prepare to reopen, maintaining physical distancing norms requires some basic school infrastructure to be in place. As per the DISE statistics, 53,533 schools in India are single classroom schools. In 19 percent schools, the student classroom ratio (SCR) is 35 and above and in 8.3 per cent schools, i.e., around 1.3 lakh schools, more than 50 students sit in one classroom (NIEPA , 2017). Clean and proper WASH facilities are a key prerequisite for schools to reopen safely in the midst of the COVID-19 pandemic. However, only 52 per cent schools have overall WASH facilities, i.e., drinking water, functional toilets and hand wash facility altogether; only 13 per cent schools in India are compliant to all RTE norms (NIEPA, 2017).

The hygiene of teachers is also very crucial. At present, around six lakh teachers who are above 55 years are serving the school education system. As per the emerging disease pattern, they are also more vulnerable to COVID-19. But the majority of schools have a single staff room for all teaching and non-teaching staff (Kundu, 2020c). A study by WaterAid revealed that in States like Telangana, Odisha, Karnataka, only 28 per cent schools have separate toilets for teachers (Water Aid, 2016).

• The reopening of schools requires the nonteaching support staff to attend to pending administrative and financial work, which has been at a standstill due to the long shut down period. However, as per DISE 2016-17, there is just one non-teaching staff for serving 312 students in school.

Statistics:

Over 1.5 million schools across India closed down due to the pandemic A switch to large-scale digital education is not possible now. Only 24 per cent house-holds have access to the internet, according to a 2019 government survey. In rural India, the numbers are far lower, with only 4 per cent households having access the education ministry's budget for digital e-learning was slashed to Rs. 469 crore in 2020-21—the year Covid struck—from Rs. 604 crore the previous year.

According to UNICEF, the Covid-19 pandemic has battered education systems around the world, affecting close to 90 per cent of the world's student population. In India, over 1.5 million schools closed down due to the pandemic, affecting 286 million children from pre-primary to secondary levels. This adds to the 6 million girls and boys who were already out of school prior to Covid-19. This disruption in education has severe economic implications too. A World Bank report, 'Beaten or Broken: Informality and Covid-19 in South Asia', has quantified the impact of school closures in monetary terms-India is estimated to lose $440 billion (Rs. 32.3 lakh crore) in possible future earnings.

To fight back the disruption and damage, educational institutes across the country embraced the digital mode of education as a solution to fill the void left by classroom teaching. With this, the hitherto peripheral digital education in India came center stage and is now increasingly getting integrated into the mainstream. The National Education Policy, released by the Union government in July, has also emphasized the importance of online education, blended with the traditional mode.

A KPMG and Google study, done before the Covid-19 outbreak, estimated that the online education market in India was set to grow to $1.96 billion (Rs. 14,836 crore), with 9.6 million users by 2021, up from $247 million (Rs. 1,870 crore) and 1.6 million users in 2016. The coronavirus-induced lockdown

further propelled the market demand for EduTech players. India has now emerged as the second biggest market for massive open online course (MOOC) in the world after the US.

While the Covid-19 pandemic has made online education the buzzword, a recent report by the global education network Quacquarelli Symonds (QS) says that the Indian internet infrastructure is still far from ready to support the shift. Only 24 per cent households have access to the internet, according to a 2019 government survey. In rural India, the numbers are far lower, with only 4 per cent households having access. A 2018 NITI Aayog report revealed that 55,000 villages in India did not have mobile network coverage. A 2017-18 survey by the ministry of rural development found that more than 36 per cent of schools in India operated without electricity. The emphasis on technology-driven education is also alienating many children from the underprivileged sections, preventing them from continuing their studies. Even other stakeholders are struggling. Teachers are not always trained and equipped to transition to online teaching.

As e-learning becomes the "new normal", the authorities have been taking steps to make digitization of education accessible and affordable for all. The Union government is banking hugely on the Bharatnet project, which aims to provide broadband to 250,000 gram panchayats in the country through optic fibre to improve connectivity. Broadband connectivity in gram panchayats is expected to help rural schools provide online education to students who do not have internet access at home. Besides building the digital infrastructure, training has to be given to the teachers to use the system to provide authentic and seamless education to the students. Successful delivery of education is also in question because learning in colleges varies from that in schools. Digital education cannot be applied the same way at every level.

COVID-19 accelerated the adoption of digital technologies to deliver education. Education institutions moved toward blended learning and encouraged teachers and students to acquire technology savvy. Soft technology, online, webinars, virtual class rooms, teleconferencing, digital exams and assessments became common phenomenon, where otherwise we might have merely defined them — or they might have come into practical use a decade later or more.

There was unimaginable collaboration among all the stake holders in the field of education — including administration, teachers, students, parents and companies making the software for transfer of knowledge in innovative ways.

Educational activities are hampered to a great extent, and we could sense a great amount of confusion, the postponement or delay in exams, academic sessions or the like. There was not enough space for the so-called co-curriculum.

The digital world was a dilemma for the teachers who were experts in book, talk, chalk and classroom methods. They had to be trained to meet the challenges of the present situation and go ahead with online teaching. And many students struggled to obtain the gadgets needed for digital learning. Pandemic has been a challenge to educational institutions, as the payment.

As students were left with no choice but to accustom themselves to the "new normal" of online schooling, pre-existing learning inequalities were magnified. These gaps, brought about by socio-economic differences, manifested themselves in educational access, participation rates, and learning outcomes. With online and remote learning being far less effective than the teacher-driven, physical

classroom mode, students have suffered what a report by Azim Premji University called "regression in learning".

Figure 1. Out-of-School Children (in %, 2018 and 2020)
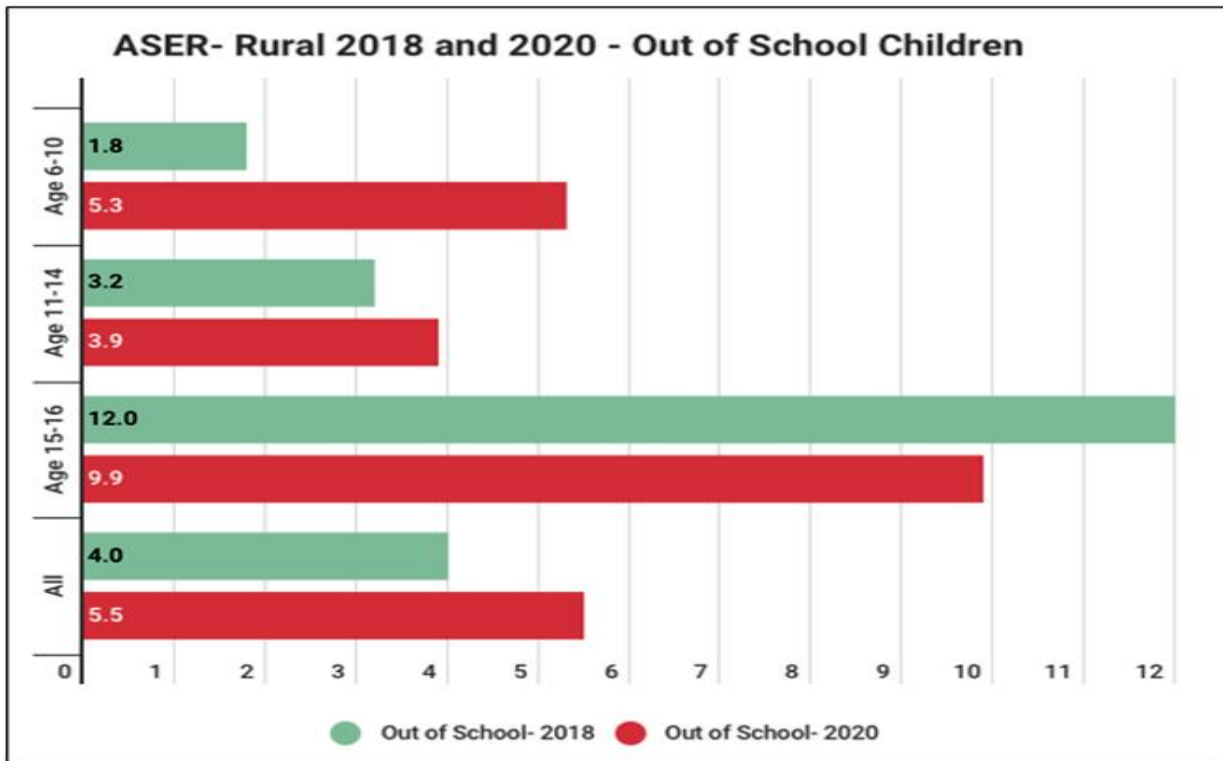
In the capital, Delhi, the government has reported that close to 15 percent of students in government schools have not been "traceable" since the initial lockdown in March 2020. Part of this number may be those who have reverse-migrated with their families. A sizeable portion of these children whose families had no option but to leave the city during the initial lockdown, could fail to re-join school if they are not provided with additional support. Girls are at greater risk of dropping out, especially in the secondary grades of 9 and 10: analysis by the Right to Education Forum estimates that some 10 million secondary-school girls are at risk of dropping out due to the pandemic. This can set back India's efforts at promoting the welfare of girls, as there is enough evidence that keeping them in school protects girls from various threats like early marriage.

Education in Crisis: Before and After COVID-19

Prior to the pandemic, education stakeholders were primarily concerned with what they called "crisis of learning" in India, which they described as "endemic". While the country had largely achieved Universal Access, Enrolment, and Retention in elementary education, its children were lagging even in basic grade-appropriate reading and arithmetic skills, as noted by the annual ASER surveys (Rural) from 2005 to 2018. The National Education Policy (NEP) 2020, approved in July 2020, responded to this concern by stressing that "attaining foundational literacy and numeracy for all children must become an immediate national mission."[

By then, a nationwide lockdown had been implemented as a response to the spread of COVID-19. Schools were closed, and consequently there was a rapid increase in the use of remote-education resources—both old media (radio and television), and new (online classrooms, YouTube videos, and messaging service WhatsApp). In September 2020, a UNICEF Rapid Assessment of Learning during School Closures found that only 60 percent of children had utilised distance-learning resources in the preceding six months.

The Wave-1 of the ASER (2020) survey also reported that a mere 18.3 percent of children in rural areas enrolled in government schools have accessed video recordings, and 8.1 percent have attended live online classes. The proportion slightly rises to 28.7 percent and 17.7 percent for rural children enrolled in private schools (See Figure 2).

Figure 2: Access and Use of Online Resources in Government and Private Schools in Rural India
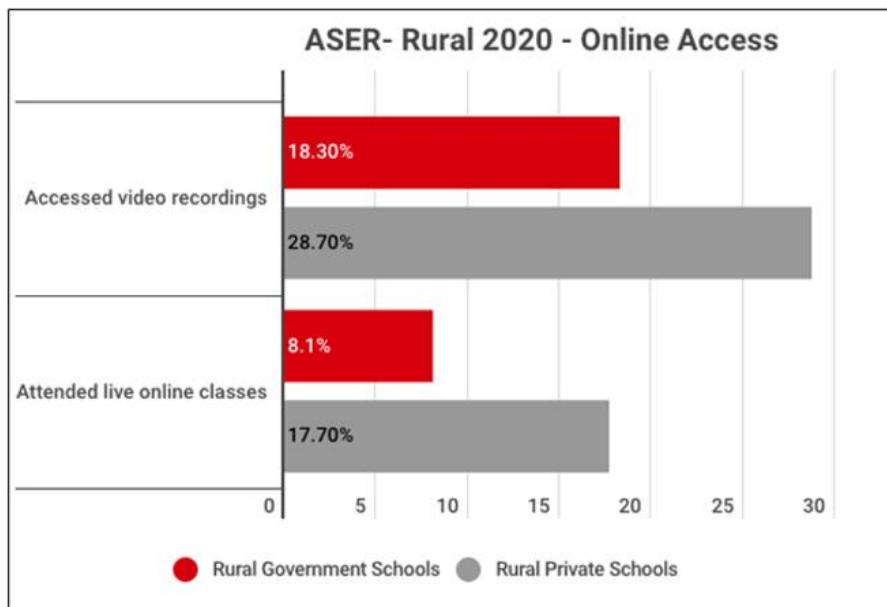
Source: *ASER (Rural) 2020 Wave 1*

Even with the best resources, remote learning with digital aids has been less effective than classroom learning. Teachers are convinced that remote learning cannot mirror school-based learning, and want schools to be reopened as soon as possible. There is also no dearth of anecdotal evidence that parents, and children themselves, have repeatedly expressed their desire to have schools reopened.

In the final version of NEP approved in July 2020, another section was added to the draft NEP 2019—'Online and Digital Education: Ensuring Equitable Use of Technology'. It recognised the equity challenges, stating, "the benefits of online/digital education cannot be leveraged unless the digital divide is eliminated through concerted efforts." The policy also emphasised the need for public digital infrastructure, online teaching platforms and tools, content creation, a digital repository, and dissemination of e-content, and incentives for teachers to teach online and blended learning.

Even with such a policy in place, however, distance-learning is causing many children to be left behind, and this is why more urgent calls are being made about the restarting of physical schools. Proponents note that according to current data from the first two waves of the pandemic, children have the lowest chance of hospitalisation and death due to COVID-19. Globally, the hospitalisation rate for children is 0.1-1.9 percent, and the mortality is at 0.1 percent; children comprised 0.05 percent of the total annual COVID-19 deaths as of May 2021.

Yet, even during the waning phase in both the first and second waves, schools have remained shut in India, while shops, restaurants, bars, and malls are open, albeit at supposedly less capacity. To be sure, the decision to keep children home serves a purpose: to conciliate anxious parents, lessen the risk of virus transmission, or give schools more time to fill the gaps in their infrastructural arrangements. However, the cost to children is steep. Surveys by the Azim Premji Foundation have found that a massive 92 percent of children between grades 2-6 have lost at least one language ability while 82 percent have lost at least one math ability from the previous year. If this loss in learning is not compensated for, it will have a domino effect on the future learning of children as they are promoted to higher grades. Truly India is facing an education crisis, the symptoms of which predated COVID-19.

Dividing the haves and have nots

At the core of the currently deepening education crisis lies the great divide in remote learning induced by gaps in access to online education related to the following elements: (i) Physical infrastructure (unreliable electricity supply, study space, and overall home environment); (ii) Electronic devices (access to smartphones, computers, TV, among others); and (iii) the Internet (3G, 4G, or Broadband). Also required are: relevant need-based content in the language the children understand, digital knowledge and skills, support in using devices, and a gender-inclusive attitude towards digital use among the family and community (See Figure 3). Compounding the divide are rural-urban disparities, as well as inequalities across class, caste, and gender.

**Figure 3: Determinants of Access to Online Education**
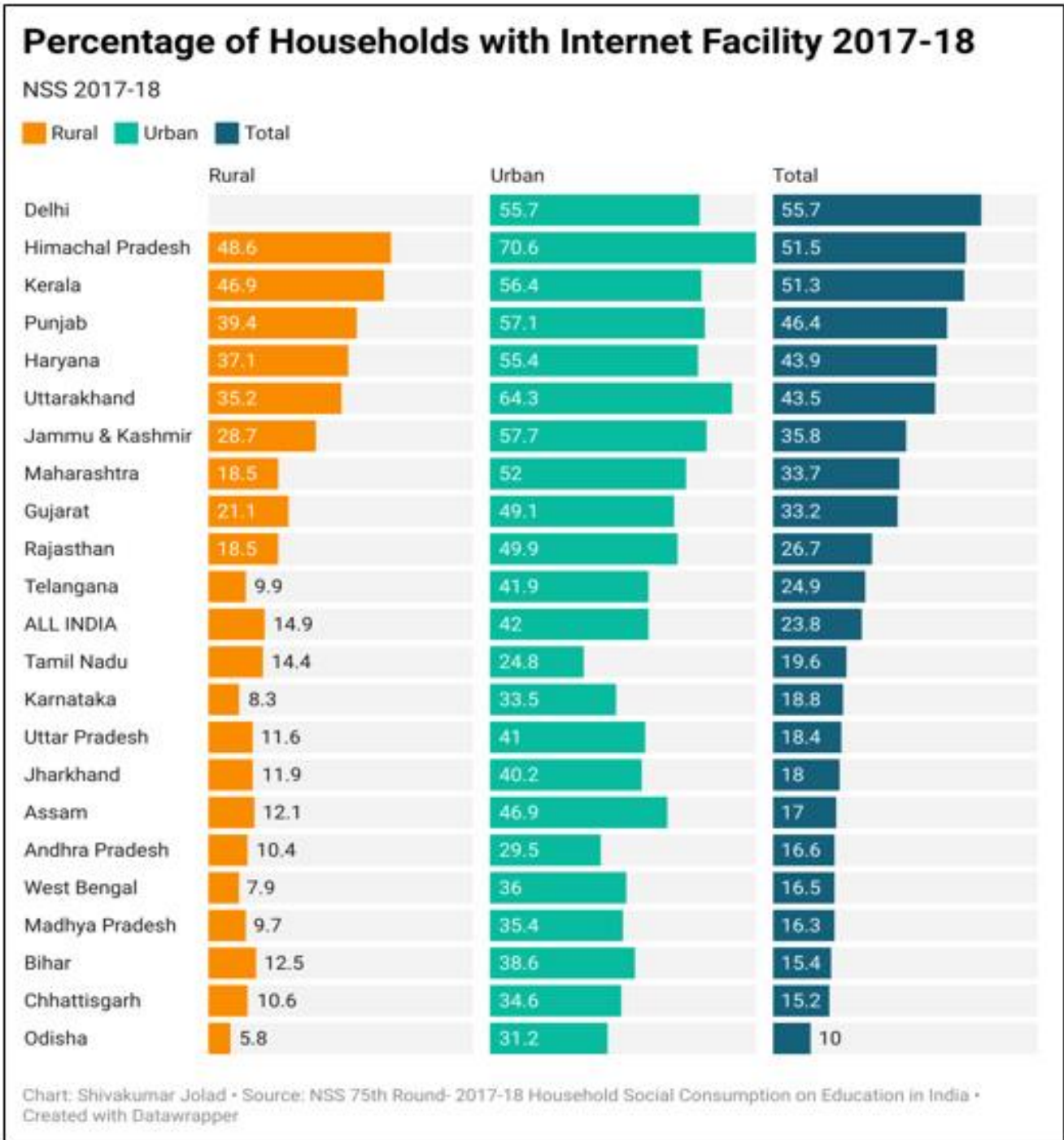

Source: *Authors' own*

Digital Divide

India's digital divide is exacerbated by disparities in access to electricity and the internet; many Indian children belong to families without these two, and it is impossible for them to meaningfully engage in online classes. While India, officially, has achieved 100%-electrification in its rural districts, only 47 percent of the households received electricity for more than 12 hours a day in 2017-18. Figure 4 shows that electrification can vary widely across states: less than 25 percent of villages in Jharkhand, Assam, and the erstwhile Jammu & Kashmir received more than 12 hours of domestic electricity. In better-off states like Goa, Gujarat and Kerala, this percentage is more than 90 percent.

Figure 4: Availability of Electricity in Villages across States
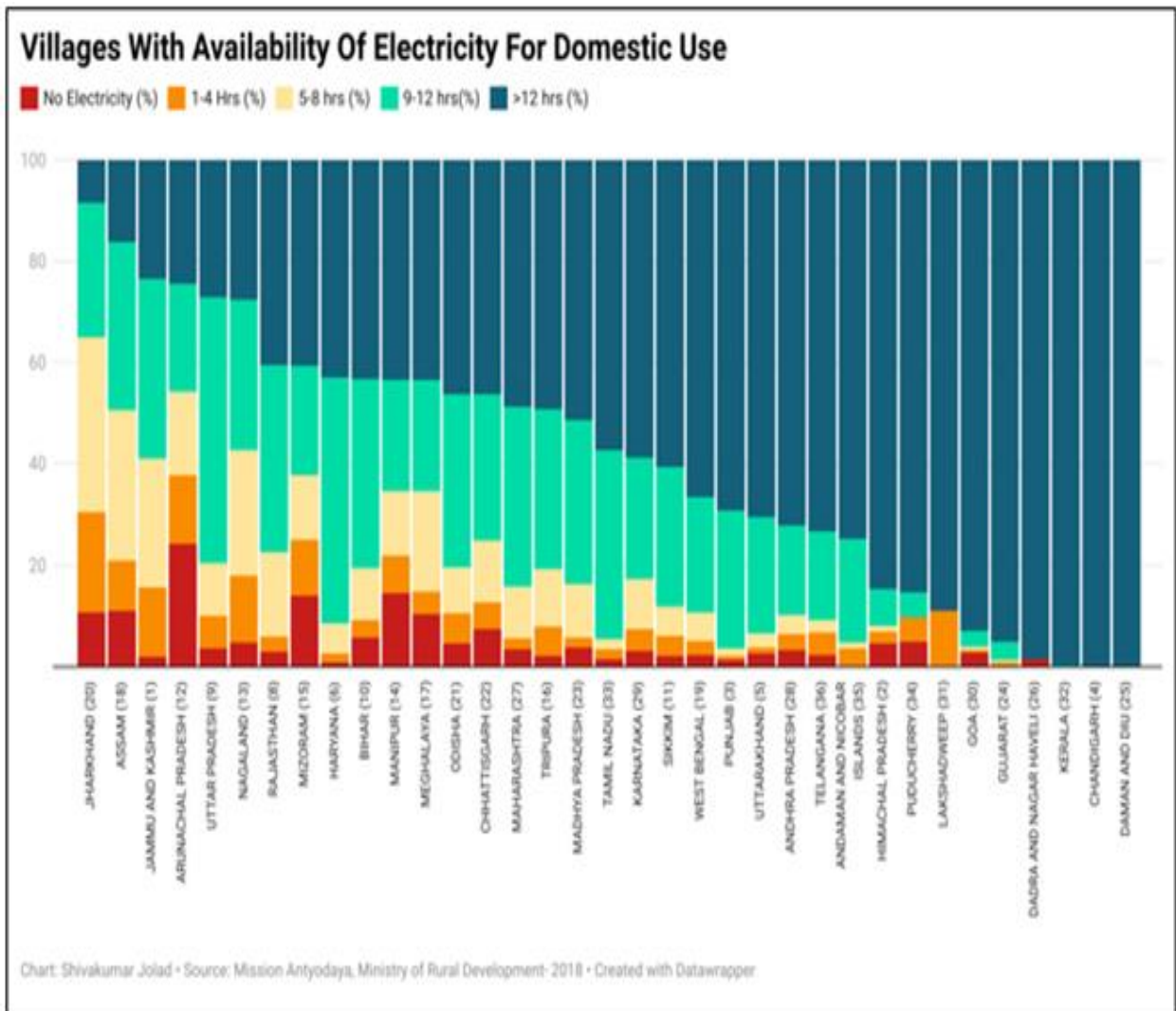
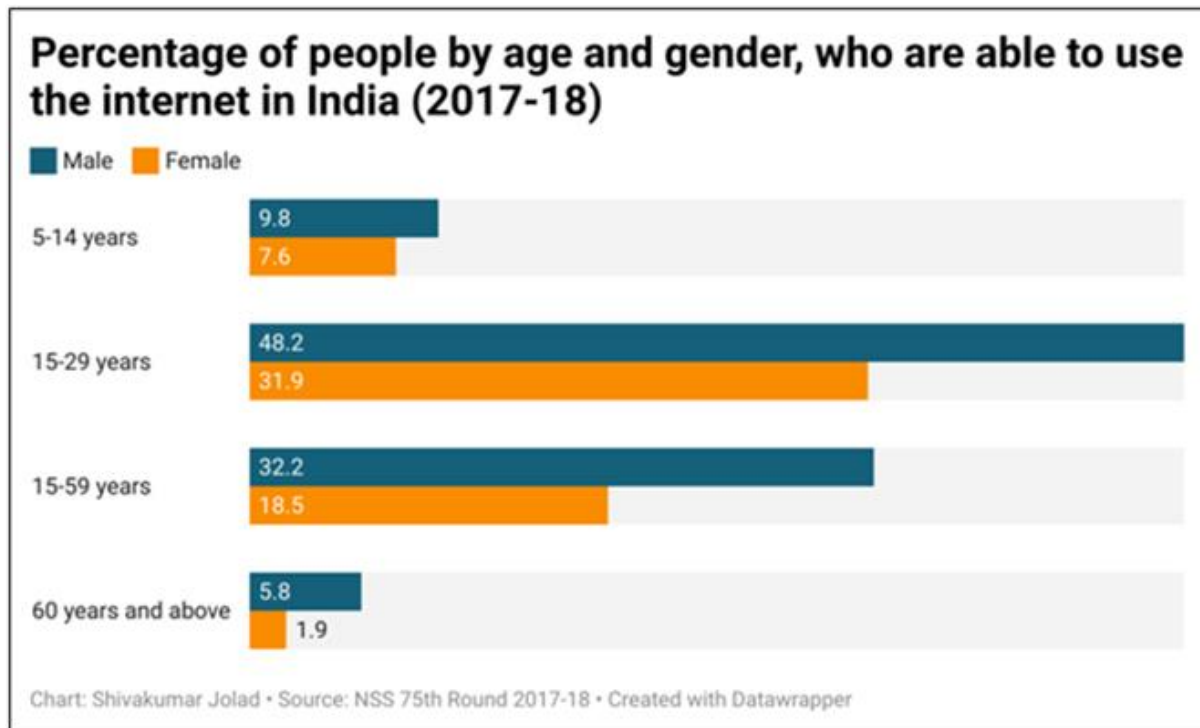**Source:** *Mission Antyodaya, Ministry of Rural Development (2017-18)*

Similar patterns are found in the National Sample Survey 2017-18 : only 24 percent of the households have access to the Internet, and the figure drops to a far lower 15 percent for the rural regions. Figure 5 shows the inter-state and rural-urban variance.

Percentage of Households with Internet Facility 2017-18

NSS 2017-18

Rural **Urban** **Total**

	Rural	Urban	Total
Delhi		55.7	55.7
Himachal Pradesh	48.6	70.6	51.5
Kerala	46.9	56.4	51.3
Punjab	39.4	57.1	46.4
Haryana	37.1	55.4	43.9
Uttarakhand	35.2	64.3	43.5
Jammu & Kashmir	28.7	57.7	35.8
Maharashtra	18.5	52	33.7
Gujarat	21.1	49.1	33.2
Rajasthan	18.5	49.9	26.7
Telangana	9.9	41.9	24.9
ALL INDIA	14.9	42	23.8
Tamil Nadu	14.4	24.8	19.6
Karnataka	8.3	33.5	18.8
Uttar Pradesh	11.6	41	18.4
Jharkhand	11.9	40.2	18
Assam	12.1	46.9	17
Andhra Pradesh	10.4	29.5	16.6
West Bengal	7.9	36	16.5
Madhya Pradesh	9.7	35.4	16.3
Bihar	12.5	38.6	15.4
Chhattisgarh	10.6	34.6	15.2
Odisha	5.8	31.2	10

Chart: Shivakumar Jolad • Source: NSS 75th Round- 2017-18 Household Social Consumption on Education in India • Created with Datawrapper

Figure 5: Percentage of Households with Internet Facility across States

Source: *National Sample Survey 75th Round (2017-18)*

The ability to use the internet also varies by age and gender, with males having an upper hand across age groups. Among children between 5-14 years, for example, the ability to use the internet stands at 9.8 percent for male children and 7.6 percent for females (See Figure 6).

Percentage of people by age and gender, who are able to use the internet in India (2017-18)

■ Male ■ Female

5-14 years
9.8
7.6

15-29 years
48.2
31.9

15-59 years
32.2
18.5

60 years and above
5.8
1.9

Chart: Shivakumar Jolad • Source: NSS 75th Round 2017-18 • Created with Datawrapper

Figure 6: Percentage of Population with the Ability to use the Internet

Source: *Key Indicators of Household Social Consumption on Education in India, NSS 75th round, 2017-18, Ministry of Statistics & Programme Implementation (MOSPI)*

Social Divide

The digital divide is not an isolated phenomenon, but rather is layered upon the existing inequalities within Indian society, in general, and the education system in particular. Professor Vimala Ramachandran, in her book "Gender and Social Equity in Primary Education", highlights the intermeshing of poverty, inequality, social identity, and gender relations and the manner in which they reinforce and offset each other within the education system. These disparities translate to substantial differences in children's access to digital resources, adult supervision, and proper learning environment.

To begin with, digital literacy builds on basic literacy, which varies according to the social group, gender, and state. According to Census 2011, the urban male (88.76 percent) and female (79.11 percent) literacy rates are higher than the national average (72.98 percent). The literacy level is much lower and the gender gap is higher in the rural areas and among the most disadvantaged groups. For example, the rural Scheduled Caste (SC) males and females both have lower literacy rates of 72.58 percent and 52.56 percent, respectively. The disparity is higher in poorer states among the Scheduled Tribes (ST). In Rajasthan, only 36.1 percent of ST women were literate in 2011. For the same group, Kerala ST women have literacy rates of 69 percent and 88 percent in rural and urban areas, respectively.

In smartphone access, in particular, ASER Rural 2020 Wave 1 revealed a drastic increase in ownership in rural areas from 36.5 percent in 2018 to 61.8 percent in 2020. The pandemic forced families to purchase smartphones for their children's education—amidst job losses and diminished

incomes resulting from COVID-19's economic fallout. However, ownership does not always translate to utilisation, which is hindered by poor digital literacy and intra-household inequality of access.

The National Election Study 2019 by Lokniti also included questions on Smartphone ownership. About one-third of the respondents aged 18 and above and roughly 50 percent in the young working-age between 18-44 years owned a smartphone. More than half (53 percent) of the upper-caste respondents owned a smartphone, compared to 23 percent of STs (See Figure 7). This low ownership among adults belonging to the marginalised communities translates to reduced access to smartphones among their children as well and, in turn, has ramifications in their attempt to engage in remote learning.

Figure 7: Smartphone Ownership in India
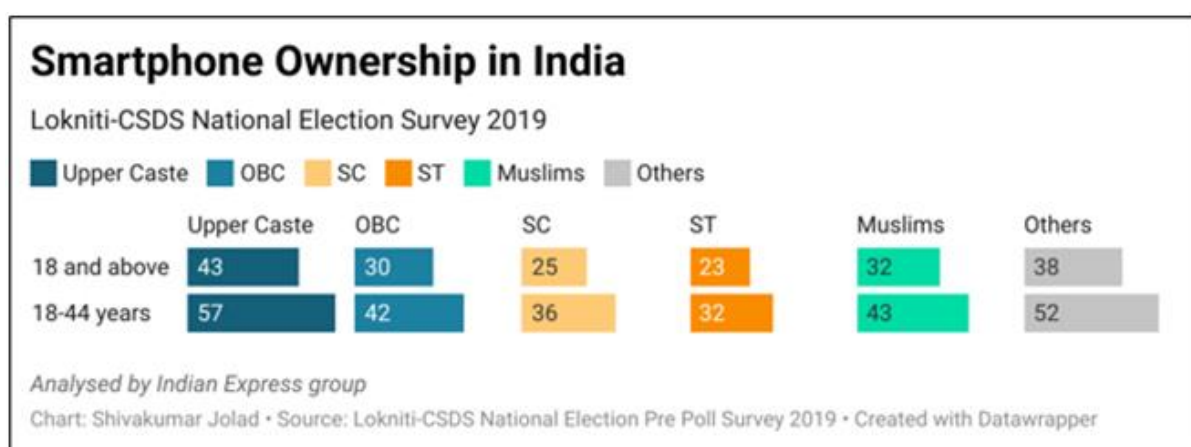
Source: *Lokniti-CSDS National Election Pre Poll Survey 2019 ,* analysed by the Indian Express Group

A study published by Leadership for Equity (LFE) in February 2021 on School Closures and Education showed that in six districts of Maharashtra, parents in tribal areas were at a far greater disadvantage than their rural and urban counterparts.[30] Less than 50 percent of them own any digital device such as a smartphone, TV or computer. The survey further noted that the *availability* of resources does not translate to *access* to those resources. Among parents who have a smartphone, almost 85 percent face problems with competing use.

Content and Language

There has been an exponential growth in learning content for school education online through text, audio and visual media in recent years, both from government and the private sector. Through the Digital Infrastructure for Knowledge Sharing (DIKSHA) platform,[34] for example, the Ministry of Education (MoE) has made all school textbooks and video lectures from different school boards available online. Under the MoE, the following efforts have been initiated to reinforce online learning:

- National Repository of Open Education Resources (NROER) has a vast repository of educational resources;

- National Council of Educational Research and Training (NCERT's) e-Pathshala provides audio, video, and e-books for school children;

- SWAYAM-Prabha provides 34 dedicated free DTH channels for e-education for school children in various languages;

- The National Institute of Open Schooling (NIOS) has been providing open schooling alternative to millions of children.

The DIKSHA portal is being used across 30 states and UTs in the country. However, there are reports that it is difficult to navigate for rural students with limited knowledge of technology. Furthermore, the platform offers limited ability for customisation at the state level, and therefore disregards the socio-cultural differences among children belonging to different parts of the country.

A majority of the quality educational material such as interactive tools are available in English. Children inept at English often struggle to take advantage of remote learning resources. While private players like Khan Academy and Pratham's PraDigi are working to make digital content available in Hindi and other Indian languages, there is immense scope to scale-up educational content in these languages.

Amidst the obstacles discussed in the prior sections of this brief, the most widely used tool of all digital media has been the messaging app, WhatsApp. Owing to its ease of use in sharing audio-visual media, the multilingual support, and widespread adoption even among the elderly, WhatsApp has been relied upon as the easiest medium of communication between teachers and students across the country. Teachers feel, too, that television and radio—which are more accessible to low-income households—have been underutilised for learning. Meanwhile, a study by the LFE in Maharashtra observed that there were too many programmes, with too little impact on learning. State initiatives such as *Abhyasmala, Swadhyay and Tilli Mili* had varying levels of participation across districts, which is at best, only "average". Programmes were either difficult, or lengthy, and others were not in conjunction with the syllabus. Therefore, even as government authorities and non-government organisations are undertaking efforts to expand remote learning content, the problem amidst plenty is in choosing the right content and aligning it to suit the diverse contexts in which students learn in India.

Divided by Socio-Economic Status, United by 'Learning Loss'

Gender, caste, and linguistic disparities have widened the existing inequalities within India's education sector. The massive 'learning loss' induced by the pandemic is common to all children, irrespective of their socio-economic background. A report by the Azim Premji Foundation found that school closures have led to a widespread phenomenon of *forgetting* among children. This means they have lost certain foundational abilities or fundamental concepts, which in turn hinders their understanding of new concepts.

As mentioned earlier in this brief, nine of every 10 children between grades 2-6 have lost at least one language ability, and eight of every 10 have lost at least one math ability from the previous year. Nearly 75 percent of parents of children between 5-13 years, with access to digital devices, report that their children have been learning less in comparison to the physical classroom setting. Students

from migrant families and STs fare even worse in this regard; the percentage is as high as 90 percent for migrant ST children.

Figure 8: Learning Loss across Grades for Language and Mathematical Abilities
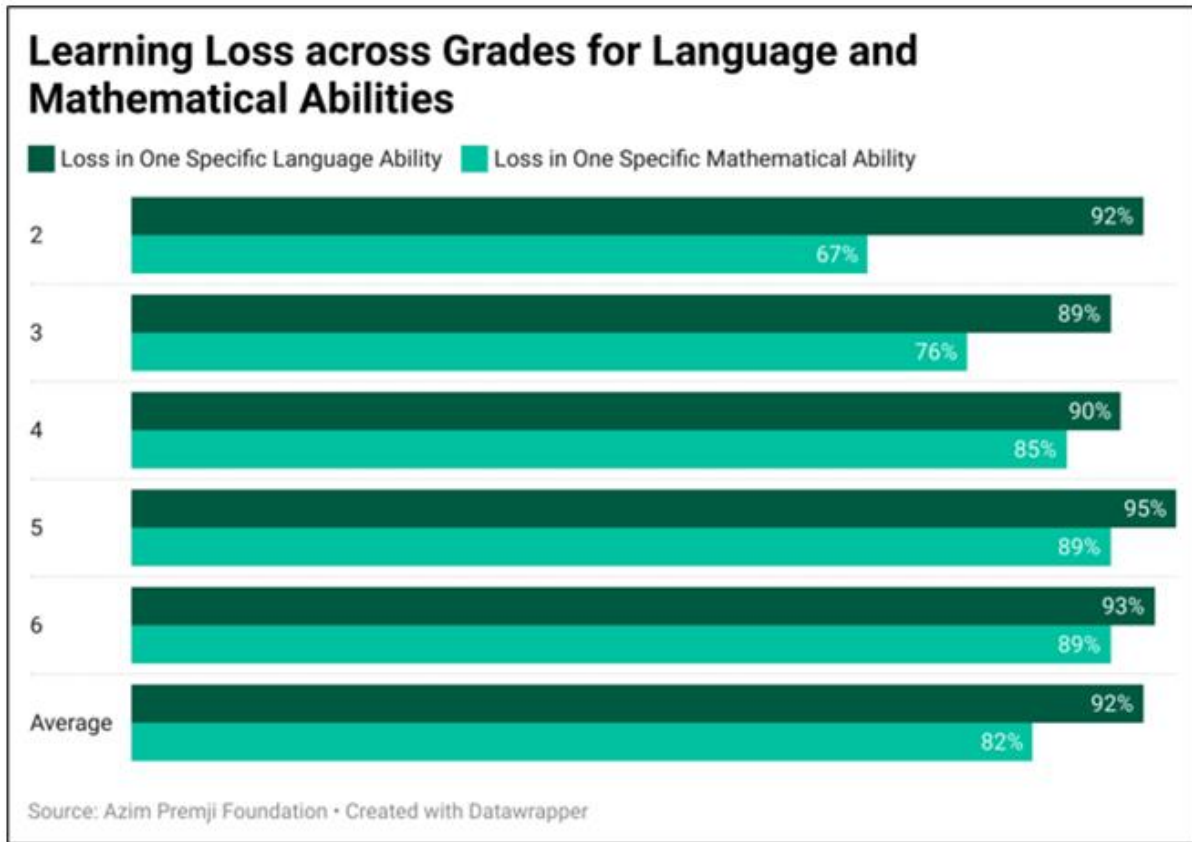

Source: *'Loss of Learning during the Pandemic', Azim Premji Foundation (2020)*

Teachers themselves, to begin with, are suffering a crisis too. As online teaching through digital learning resources is not a part of the pre-service training curriculum, teachers are struggling to remotely address learning difficulties among children. Further, the efficacy of teaching remotely is limited by the fact that teachers themselves often struggle with internet bandwidth and the expenses involved in carrying out these online classes. In Rapid Surveys conducted by Oxfam India, 84 percent of government school teachers reported that they were facing challenges in delivering education through remote mediums.

When schools restart, simply continuing the curriculum without any course correction for the regression suffered in the past year and a half can have a cascading effect on learning as students graduate to higher classes. A landmark study by Karthik Muralidharan and associates at Education Initiatives, made an assessment of the levels of student achievement with respect to current grade enrolled in Adarsh Schools of Rajasthan. Figure 9 shows the assessed ability and grade enrolled in Math and Hindi. There is a general deficit of average attainment and grade-expected norms. More importantly, within each grade, there is a wide dispersion of student achievement, making it an extremely challenging task for teachers in government schools to handle such variation. The gap between *actual* and *expected* learning level only widens as children move to higher grades.

Figure 9: Assessed Ability with respect to Grade enrolled for Math and Hindi
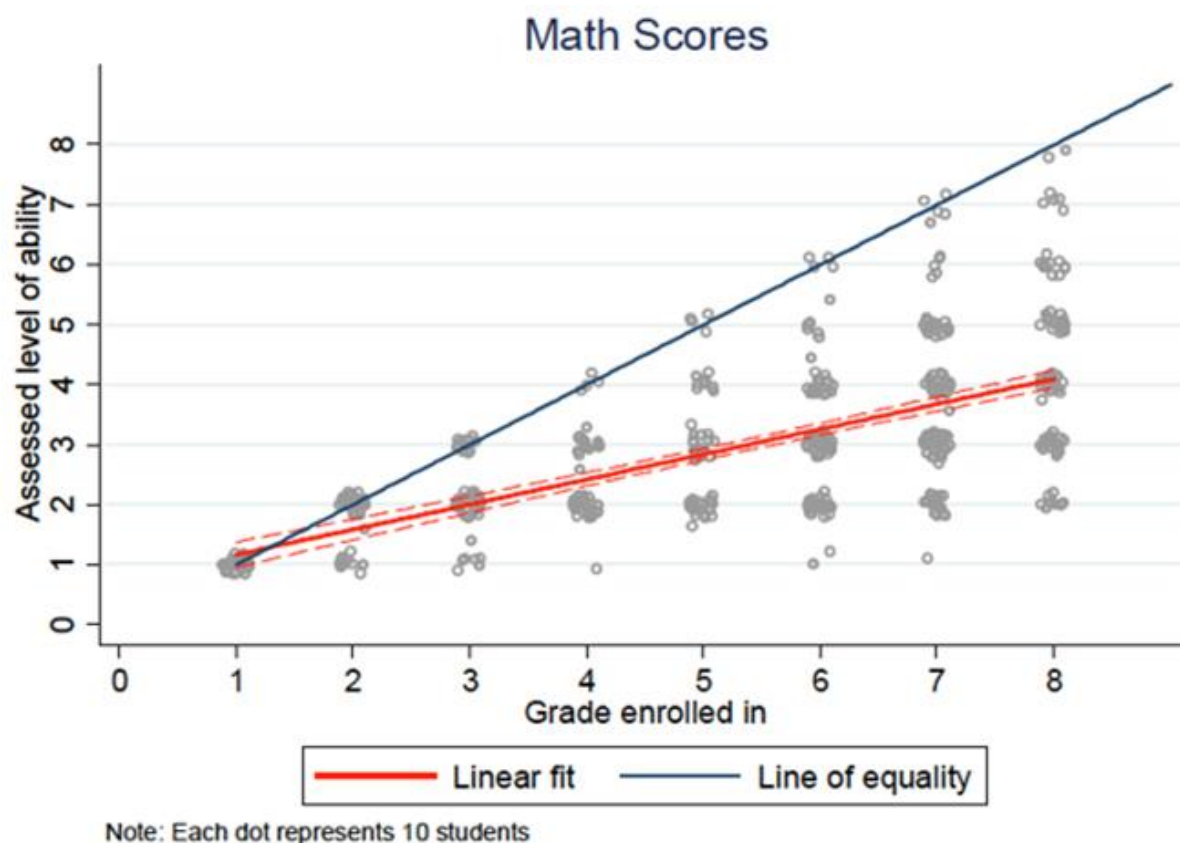
Source: *Muralidharan, Karthik "Reforming the Indian School Education System" in What the Economy Needs Now – 2019.*

This 'regression in learning' will only build upon the learning inadequacies of the previous grades and result in cumulative losses over the years. For those who have dropped out of school, re-entry would be challenging, and for those that have been retained, catching up with curriculum would be daunting. Inference can be made from Karthik Muralidharan's study that regression in learning due to school closures can hinder academic performance of children as they progress to higher classes and higher education. The socio-economic and gender divide would further hamper the learning achievements of the children from the disadvantaged groups. In a world where education premium has only increased, the impact of dropping-out and learning loss can last a lifetime, diminishing job prospects and future earnings.

New Normal, New Approach

Further delay in opening of schools is becoming increasingly unwarranted. In April, the Lancet India Task force on reopening schools had emphasised that there is little impact of school opening on population-wide transmission rates. Data from countries that have reopened schools also show low levels of community transmission. Younger children (less than 10 years) play a smaller role in spreading the virus, and experience mild or no illness from COVID-19. Therefore, it is unlikely that any future COVID-19 wave will have a serious impact on children. Further, the recent fourth national level seroprevalence survey by the Indian Council of Medical Research (ICMR) showed that two-thirds of Indians above six years have COVID-19 antibodies in India

The ICMR brief launched in July 2021 also recommended that schools need to be re-opened, at the earliest and in a staggered manner, beginning with primary schools (grades 1-5). Foundational skills have been consistently shown to exert significant influence on the generation of human capital, and therefore it is crucial to prioritise learning for early graders. Considering board examinations, various state governments are keen on opening schools for children enrolled in grades 9-12. However, older children are more capable of making up for in-school learning via self-study, virtual learning, and interaction with teachers. On the contrary, early graders are less likely to retain what they have learned through remote learning, and therefore opening up of pre-primary and primary schools should be prioritised.

A prerequisite to opening schools is the vaccination of India's 9.6 million teachers and associated school staff. By replicating the priority model followed for students pursuing higher education overseas, at least the first dose of the vaccine can be administered to teachers and school staff within a few weeks, paying the way for a safer reopening of schools. Priority vaccination of teachers is also in line with their repeated demands for vaccination considering that they were deployed as frontline workers without being provided any compensation or recognition by the government.

India's enduring 'crisis of learning' has been greatly compounded by the 'regression in learning' brought about by school closures as a response to the pandemic. When schools reopen, remedial learning needs to be prioritised through 'bridge classes' focused on foundational learning and strengthening fundamental concepts. This is among the recommendations outlined in The Students' Learning Enhancement Guidelines-2020 issued by NCERT; the aim is for "learning enhancement" both, during COVID-19 for students with limited access to digital devices or none at all, and also for when schools restart. It calls for monitoring all groups of schools (government and private), mapping children and their digital learning needs, capacity building of teachers, and modified learning plans. The report highlights the need for distance-learning to shift the emphasis from academic content alone to social and emotional aspects to ensure effective learning.

When the children go back to school, the old approach of grade-wise progression of the curriculum will no longer be conducive to learning. India needs to move towards modular-based learning that builds on students' current competencies. Students should be grouped according to their learning level rather than their grade, as demonstrated by Pratham's scalable 'Teaching-at-the-Right-Level' (TaRL) model. The 'Graded Learning Program' (GLP) based on the 'TaRL' method implemented in 110,000 schools of Uttar Pradesh in 2019 showed substantial reading and arithmetic improvement in a span of only two months. Simultaneously, the focus of assessments should shift from common grade-level examinations to measurements of proficiency and skill development.

If at all children need to be promoted to the higher grade, the curriculum needs to be modified such that it includes content from the previous grades as well as selected topics from the current grade. It is crucial to prioritise a learning-driven approach over the completion of the designated syllabus. As recommended by the Oxfam Report on Government and Private Schools during COVID-19, a model similar to the 'mohalla schools' of Chhattisgarh and Madhya Pradesh can be replicated in other rural districts.

As students grappled in this situation yearning to acquire knowledge, similar challenging scenario was faced by teachers. Technology was like a dewdrop only the asset of few teachers, they didn't have

the requisite knowledge and skill to incorporate technology in classroom in the online space. There was an urgent need to unlearn traditional classroom practices, learn new academic skills and relearn to upgrade the technical and technological skills.

The initial classes during online sessions were spent in familiarizing with the technology and usage. Very often the classroom was seen as a dark room with only the attendance of students as icons on screen. This learning space transformed the way teachers planned their classroom transaction. The lesson plans were modified, learning outcomes had a new dimension in realizing the objectives to be achieved in the classroom.

It was important for teachers to emerge with understanding the impact of Covid -19 in classroom and education. This paper aims to study the impact of Covid-19 in education focusing on the learning outcomes, curriculum transaction and evaluation.

Rationale and hypotheses

Learning transcended boundaries of the classroom, today learning moved from the four walls of the classroom to the four walls of the homes and at the fingertips of each child. Teachers and students both were in a compromising situation with respect to learning, curriculum transaction and evaluation. Since learning could not be face to face through an offline mode the assessment also couldn't meet the expected paper pencil test conducted for the set time period. The Covid -19 pandemic turned the educational expectation to a standstill, the learning outcomes, curriculum transactions and evaluation both had to be revised based on the current educational scenario. It was important to look into the present educational setup and plan for the upcoming revision in academic discourse. Teachers could no longer continue to follow their regular lesson plan and hence there was an immediate need to change the learning outcomes, curriculum transaction and evaluation.

Learning outcomes: Learning outcomes are user-friendly statements that tell students what they will be able to do at the end of a period of time. They are measurable and quite often observable. Learning outcomes are usually discussed within the context of program-wide assessment, but they can be valuable components of any class because of the way they sharpen the focus on student learning.

Curriculum transaction: Curriculum Transaction incorporates effective planning for providing learning experiences for its learners, organization of planning, administration/implementation of the organized planning and evaluation.

Evaluation: Evaluation helps to build an educational programme, assess its achievements and improve upon its effectiveness. Evaluation plays an enormous role in the teaching-learning process. It helps teachers and learners to improve teaching and learning. Evaluation is a continuous process and a periodic exercise.
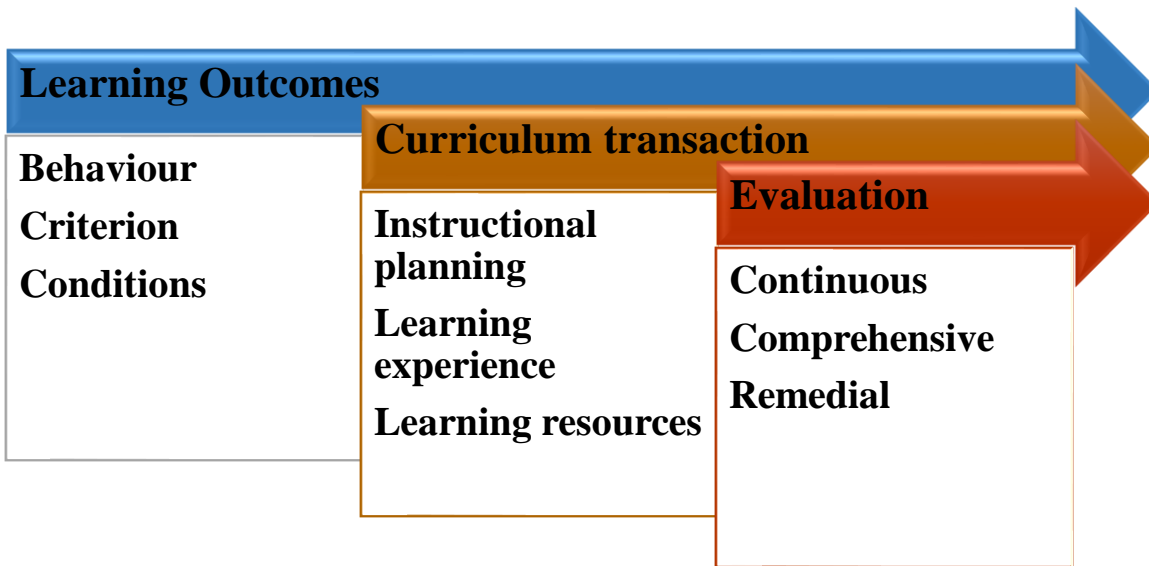
This paper is aimed to find out the impact of Covid 19 in education focusing on the learning outcomes, curriculum transaction and evaluation. The study focused on identifying the impact from teachers perception.

Hypothesis 1.

Covid-19 pandemic-related learning outcomes (e.g., intellectual skills, concept of learning, rules of learning, procedures involved in the learning, cognitive strategies, objectives that focus on thinking, organising, leaning and behavioural change, verbal information towards achieving the learning objectives, focusing on motor skills towards physical ability, performing action, achieving fluidity, proper timing through practice, highlighting learners response to people or situations, intended outcomes, observed outcomes, broad outcomes) highlights the teachers perception in the study

Hypothesis 2.

Covid-19 pandemic-related curriculum transaction (e.g., Curriculum Transaction incorporates effective planning for providing learning experiences for its learners, organization of planning, administration / implementation planning in execution of framed objectives, Clarity of thought to be presented, Sound knowledge to transact to the target, Review of the work in prior, Team responsibility, Clarity of communication, Addressing different levels of children, Knowing, observing and understanding children at all times, Time management, Alertness in preparation and presentation, Material organization relevant to the level of pupils, Facilitate learning Environment, Selection of appropriate teaching style and method, Ready alternatives if needed, mode of curriculum Facebook Live, YouTube Live, Google Meet, Skype, Zoom, Team Viewer, GoTo Meeting, Free Conference call, Team Link, Cisco WebEx) highlights the teachers perception in the study

Hypothesis 3.

Impact of Covid-19 pandemic on learning outcomes, curriculum transaction and evaluation.

Covid-19 pandemic-related curriculum transaction (e.g., comprehensive process, continuous process, social process, descriptive process, co-operative process, decisive process, types of evaluation) highlights the teachers perception in the study

Method

Study design and setting

Descriptive survey was done. Data collection was done by a google form on a 4 point Likert scale –(always, sometimes, rarely, never). Teachers viewpoint was collected on two aspects – before Covid and During Covid. The data was collected on structured statements. An open ended questionnaire was also asked to give few striking highlights on the transition of teacher's role. All questions were asked in English. Data were collected in September 2020, towards the end of the first digital only semester and after the first peak in COVID-19 cases in India.

Participants

The participants for the survey was 200 teachers teaching in the secondary and senior secondary schools and degree colleges. The details such as Institution, teaching experience, awareness of use of ICT in learning was asked in the Personal data sheet.

Result and discussion:

Hypothesis 1.

Covid-19 pandemic-related learning outcomes (e.g., intellectual skills, concept of learning, rules of learning, procedures involved in the learning, cognitive strategies, objectives that focus on thinking, organising, leaning and behavioural change, verbal information towards achieving the learning objectives, focusing on motor skills towards physical ability, performing action, achieving fluidity, proper timing through practice, highlighting learners response to people or situations, intended outcomes, observed outcomes, broad outcomes) highlights the teachers perception in the study.

Findings : The *t*-value is 41.33899. The *p*-value is $< .00001$. The result is significant at $p < .05$.

Discussions: The point of concern is here is the non-availability of internet connectivity, resources, student engagement to plan for the learning. Digitisation was new in the hands of every teacher. To plan for a lesson was sometimes a feeling of stress and strain. The teachers barely knew the process of lesson strategies in an online class, hence the learning outcomes had to be altered in contrast to a physical classroom. Learning was no longer in a water tight compartment, rather it was fluid and sometimes not seeping well in the online classroom. The learning outcome – expectation by the teacher was almost found to be dripping like drops of water. The teacher was unable to write down explicitly in the classroom due to the changed scenario. The concept of learning had changed – face to face physical learning became face to sometime face through online learning. The teacher could barely focus on critical and creative thinking due to the lack of internet connectivity, smooth flow of lesson conduct, parental interference and even to a large extent the method of teaching. Very little scope was given to motor skills towards physical ability and performing activities. The large number of students in the small boxes of the online class was difficult to be monitored. The network challenges of the

teachers themselves was also like opening a Pandora box of issues. The outcomes could not be well defined in term of intended outcomes or observed outcomes and even broad outcomes.

Hypothesis 2.

Covid-19 pandemic-related curriculum transaction (e.g., Curriculum Transaction incorporates effective planning for providing learning experiences for its learners, organization of planning, administration / implementation planning in execution of framed objectives, Clarity of thought to be presented, Sound knowledge to transact to the target, Review of the work in prior, Team responsibility, Clarity of communication, Addressing different levels of children, Knowing, observing and understanding children at all times, Time management, Alertness in preparation and presentation, Material organization relevant to the level of pupils, Facilitate learning Environment, Selection of appropriate teaching style and method, Ready alternatives if needed, mode of curriculum Facebook Live, YouTube Live, Google Meet, Skype, Zoom, Team Viewer, GoTo Meeting, Free Conference call, Team Link, Cisco WebEx) highlights the teachers perception in the study

Findings : The t-value is 14.38023. The p-value is $< .00001$. The result is significant at $p < .05$.

Discussions: Differentiated teaching learning activities become a major crux in enhancing a great learning among students. The method of teaching adopted by every teacher is unique and takes the learner to deeper understanding, acquisition of knowledge and skills and eve change in attitude. The classroom experience involves self-learning and social learning. The impact of the peer in the learning process proves to be helpful for students. The methods of teaching such as discussion, questioning, experimentation, case study, role play, field trip, project etc help in learning to be more concrete and in-depth. However the online classes challenged most of them and made learning move through a lot hurdles as the learning was now remote and in the hand of a gadget with limited scope of self-learning and social learning. We need to also remember that these gadgets were for once considered as the forbidden fruit in the garden of Eden and now it was in the hands of each of them. To keep a track on the learning and surfing was very difficult. Children would easily get distracted with pop-up advertisement, chats and messages all this made the learning pass through a narrow bridge of achieving the learning outcomes. To address the diverse learning need of the students, the teacher could barely use some pictures or videos in the class to make the lesson interesting and interactive. However this was not too successful as again the challenge of internet connectivity and usage of device was a hindrance in the smooth flow of the same. The teachers faced a lot of issues in doing any kind of activity due to the lack of space at home, most of them lived in limited space and pace constraints and learning could not be disseminated like the privilege of a school environment.

Hypothesis 3.

Covid-19 pandemic-related curriculum transaction (e.g., comprehensive process, continuous process, social process, descriptive process, co-operative process, decisive process, types of evaluation) highlights the teachers perception in the study.

Findings: The t-value is 16.14998. The p-value is $< .00001$. The result is significant at $p < .05$.

Discussions: Evaluation become the backbone of learning but if the learning is not strong how can we lay our foundation concrete based on evaluation. Everything is being compromised in this situation whether it is learning situations or learning outcomes. The assessment and evaluation gives a clear picture of achieving the learning outcomes and the broad aims. They are crucial in policy planning and implementation new practices in the classroom. But in the current situation, the evaluation had almost gone through a rough patch. The supervised evaluation could longer exist due the online remote testing. The internet capacity and lack of effective gadget control and remote examining the entire purpose of learning and evaluation was almost like searching for a needle in the stack of hay. It was considered if haven't taught the way we should have done the teaching, then we should not test the manner in which we usually do in the classroom. It is a simple understanding of stimulus and response. With no effective stimulus the response is bound to be in the same manner. Also there was no standardised method of testing that was approved and verified. Educational institutions adopted the testing methods that suited their convenience and availability of resources for their teachers and students.

Based on the type of Institution:

The data was collected from the teachers through a Google Form and the number of respondents based on the type of Institutions were College: 116, School: 84

Findings: The t-value is -11.54801. The p-value is $< .00001$. The result is significant at $p < .05$.

Discussion: the respondents were from school and college teachers. Though both of the categories were equally affected, the governing body for them was different and hence different methods, plans and process was determined. The college teachers followed the UGC and University pattern while the school followed the State rules and regulations. The schedule was different and the planning was also diverse. Hence there was a difference in the implementation of the online teaching and learning.

Teachers opinion was taken through an open ended questionnaire. The following opinions were highlighted.

89 % teachers opined about virtual reality

92% teachers favoured experiential learning through field trips

64% teachers felt lag in internet caused learning disruptions

66% teachers were not familiar with the use of ICT in online classroom

74 % teachers faced internet challenges

81 % teachers were finding it difficult to teach on the online platform

93% teachers felt the work burden had increased

78% teachers faced student participation had decreased considerably

82% teachers felt that learning outcomes were not achieved

66 % teachers were unable to implement new methods of teaching in the initial stages of online curriculum transaction

78% teachers were unable to conduct flexible evaluation methods

81% teachers felt that evaluation does not reflect objectivity and reliability

Conclusion

The country's education sector is experiencing a crisis far deeper than the one prior to the pandemic. Immediate and effective measures are needed to pull millions of children out of this crisis.

If there is one positive outcome of the transition to remote learning, it is the improvement in digital literacy among education stakeholders—the students themselves, and their teachers and parents. This literacy can pave the way for a blended mode of learning, wherever feasible, wherein the beneficial outcomes from digital learning can be combined with those from in-person class lectures to enhance the quality of education as well as digital literacy among children. The heightened involvement of parents in students' education can be leveraged by policymakers, engaging them to become active contributors to the academic progress of their children.

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